AMERICAN MACHINIST

1881.

INDEX TO VOLUME IV.

JANUARY 1 TO DECEMBER 31, 1881.] ILLUSTRATED ARTICLES ARE MARKED WITH AN ASTERISK, THUS *. [96 FULTON ST., NEW YORK.

A

Accidents, Government Record of Marine, Jan. 1, p 8
Affliction, Our National, Oct. 8, p 8
Algebra of Mechanics, The, July 23, p 8
American Institute Fair, Engines and Machinery at the, Oct. 29, p 3
American Institute Fair Notes, Nov. 5, p 7
Annealing Steel, July 30, p 1
Apprentices, A Plan to Assist, Jan. 1, p 8
Apprentices, Some Suggestions to, Feb. 12, p 2
Apprentices, How to Make Room for, March 12,p 8
Apprentices, Why Scarce, April 30, p 8
Apprentices, Reasons for so Few, July 16, p 9
Apprentices,Profitable and Unprofitable,July 30,p 8
Apprentice Papers. Chordal, Sept. 3, p 2; Sept. 17, p 4; Sept. 24, p 4
Apprentices, Need of a Standard for, Sept. 3, p 2
Apprentice, Practical Calculation for the. Herman T. C. Kraus, Oct. 8, p 4
Atomizing Mineral and Other Substances, Dec. 10, p 8
*Averaging Instrument, Coffin's, Sept. 10, p 3
Award, A Steam Engine, Aug. 20, p 3

B

Basic Dephosphorizing Process, Feb. 12, p 2
Babbitt or White Metals for Lining Journal Boxes, March 19. p 2
*Belts, Experiments on the Adhesion of Leather. Samuel Webber, May 21, p 3
*Belt Shifter, Hadley's, June 4, p 4
*Belts, Formula for the Horse Power of Leather. A. F. Nagle, June 11, p 1
*Belt, A Wire, July 23, p 7
*Bits of Experience No. 8. Prof. John E. Sweet, Jan. 1, p 4
*Bicycle, An Improved, Aug. 13, p 7
*Blower, New Hand for Forges, Aug. 6, p 7
*Bob, A New Plumb, July 30, p 2
Boiler Explosion Caused by Carelessness, Jan. 29, p 8
Boiler Plate Designations, Jan. 29, p 8
*Boiler, Compound Tubular Steam, Feb. 5, p 1
Boilers, Capabilities of Steam. Wm. J. Williams, Feb. 5, p 3
Boilers, Care and Management of Steam. F. B. Allen, March 26, p 1
Boilers, Bracing, May 7, p 2
Boiler, Steam Evaporation Tests, May 7, p 3
Boiler Heads, Cast Iron, July 9, p 8
*Boiler Explosion, The Gaffney. F. B. Allen, July 23, p 2
Boiler Explosions—Who is to Blame? July 23, p 8
Boiler Explosions, Scientific, July 30, p 8
Boiler Heads, Strength of Cast Iron, Aug. 6, p 1
*Boiler, A New Safety Steam, Aug. 13, p 1
*Boiler Bending Rolls, Aug. 13, p 3
Boilers, Removing Scale in, Aug. 13, p 4
Boiler Plugs, Fusible, Aug. 13, p 8
Boiler Explosions, New Theories of, Aug. 13, p 8
*Boiler, Horizontal Tubular, Dec. 31, p 2
*Boiler, An Improved Coil, Aug. 27, p 4
*Boiler Tube Expander, New, Sept. 24, p 3,
Boiler Explosion in Jersey City, Oct. 1, p 7
*Boiler Plate, Vertical Bending Rolls for, Oct. 8, p 7
Boiler Explosion, The Jersey City, Oct. 22, p 8
*Boiler and Steam Pump, Combination Portable, Feb. 26, p 3
*Boiler Cleaner, Locomotive, Nov. 5, p 4
*Boiler, Improved Horizontal Tubular Steam, Nov. 5, p 5
*Boiler Setting, Jones Fire-jamb Plates and, Dec. 10, p 2
Boilers, Lifetime of, Dec. 10, p 7
Boilers, The Horse Power of, Aug. 13, p 8
Boilers, What becomes of Condemned, Aug. 27, p 6
Boilers, Care of Steel, Sept. 3, p 2
Boilers, What Ails Steam, Nov. 19, p 1
Books for Machinists, March 12, p 8
*Boring Bar, A Special. F. F. Hemenway, Aug. 13, p 5
*Boring and Turning Mill, New, Jan. 22, p 1
*Boring Machine, and New Circular Saw Table, Nov. 26, p 1
Boys to do, What are the, Nov, 19, p 8
Boys, Shop Experience With, June 11, p 8
Boys, An Opportunity for, Nov. 5, p 2
Brain Power and Machine Work, Nov. 5, p 5
Brazing or Hard Soldering. Thos. F. Hagerty, Jan. 15, p 4
Brewer's Academy, A, Aug. 6, p 8
Bridge, The First Iron, Feb. 12, p 4
Brooklyn Bridge Progress, Dec. 31, p 3
Building of the Mass. Charitable Mechanic's Association, New, April 2, p 1

C

*Calorimeter, as a Pyrometer for High Temperatures, Use of the. J. C. Hoadley, June 4, p 7.
*Calipers, Machinist's, June 18, p 3
*Cam, A Brief Treatise on the Steamboat. Lewis Johnson, July 2, p 4; July 9, p 4
Canals, Steam On, Jan. 29, p 7
Canal Systems of Europe and America, The, Dec. 24, p 3
Canals, Starting Ship, March 5, p 8
Canadian Opportunity, Realizing a, April 2, p 8
Capital, The Mechanic's, Aug. 27, p 7
Car Wheel Question, Feb. 12, p. 2
*Car Wheel Borer, Improved Vertical, Jan. 8, p 5
*Car Replacer, Pullman's Improved, April 2, p 2
*Car Boring and Mortising Machine, April 9, p 3
Car Builder's Association, Report of Committee, July 2, p 7
Car Builders' Convention, Master, July 2, p 9
Car Builders, The Master, July 9, p 6
Car Spring Specifications, Oct. 1, p 4
Carelessness About Machinery, March 19, p 8
*Castings, Burning or Mending Heavy. Thos. D. West, Jan. 15, p 1
Castings of Iron and Bessemer,, July 16, p 3
*Castings, Method of Making a Heavy Green Sand. Thos. D. West, Aug. 13, p 5.
Castings, Chilling Cast Iron. Thos. D. West, Oct. 8, p 7
Castings, Making Chilled Smooth. Thos. D. West, Oct. 29, p 4
Castings, Cost of Iron, Nov. 5, p 8
*Casting Large Pipes in Green Sand. Thos. D. West, Sept. 3, p 4
*Chuck, Equilibrium. F. G. Woodward, April 2, p 2
*Chuck, Combined Lathe and Drill, April 9, p 3
*Chucks, New Lathe and Drill, July 30, p 5
Circles, Areas of; July 30, p 3
Coal, Anthracite, Evaporative Efficiency of. D. N. Melvin. Jan. 8, p 4
Coal, Condensed, Aug 27, p 8
*Coffee Roaster, Burns' Improved, Dec. 24, p 3,
Color, What It Is, March 19, p 3
Companies, Two Kinds of Manufacturing, Aug. 13, p 8
Companies, Newly Incorporated. Jan. 1, p 7; Jan. 8, p. 7; Jan. 15. p 9; Jan. 22, p 3; Jan. 22, p 10; Jan. 29, p 7; Feb. 5. p 7; Feb. 12, p. 3; Feb. 19, p 7; Feb. 26, p 7; March 5, p 7; March 12, p 7; March 19; p 7; March 26, p 7; April 2, p 7; April 9, p 7, April 16, p 7; April 23, p 7; April 30, p 7; May 7; p 7; May 14, p 7; May 21, p 7; May 28, p 7; June 4, p 7; June 11, p 7; June 18, p 7; June 25, p 9, July 2, p 7; July 9, p 9; July 16, p 7; July 23, p 7 and 9; July 30, p 7 and 9; Aug. 6, p 9; Aug. 13, p 7; Aug. 20, p 7 and 9; Aug. 27, p 9. [For this heading in Subsequent Issues, see page 9.]
*Compressor, Allen's High Speed Air, Mar. 26, p 1
*Compressor, New Gas, April 30, p 4
*Compressor, Fish's Improved Air, Mar 19, 3
Compromising in the Machine Business. F. F. Hemenway, April 2, p 4.
Company, A Juvenile Stock, March 12, p 2
Cone Pulley Diameters. Prof. J. F. Klein, Oct. 15, p 1; Oct. 22, p 2; Nov. 26, p 2
*Condenser, Korting's Water Jet, June 4, p 4
Contributors, Topics of, July 9, p 8
Cooper, Peter, Ninetieth Birthday of, Mar. 5, p 8
Cooper's New Enterprise, Peter. A School of Tools and Machinery, Oct. 8, p 4
*Cooking Apparatus, New Steam, March 12, p 1
Cooling by Artificial Means, June 18, p 3
Correspondents, Some Topics Treated by our, June 18, p 8
Cost, Reducing and Improving Quality, Mar. 5, p 8
Cotton Manufacturers, Semi-Annual Meeting of, Dec. 24, p 4
Cotton Manufacturers at the South, Dec. 31, p 8
Cotton Seed Hulls for Packing Journal Boxes. January 1, p 2
Counterbalancing of Engines and Other Machinery. Prof. S. W. Robinson, Nov. 5, p 2; Nov. 12, p 3
Counterbalancing, Weight of Valve and Connections in Upright Engine. F. F. Hemenway, Nov. 19, p 7
*Coupling for Transmitting Power, The Almond, Feb, 26, p 3
*Coupling, A Compression Shaft, April 9, p 4
*Couplings, Friction Clutch Cut-Off, April 16, p 3
*Couplings, Improved Shaft and Pipe, May 14, p 3
*Coupling, Oldham's Shaft. Aug. 27, p 7
Crane, New Locomotive Steam, Dec. 10, p 5
*Cranes, Weston's Hand Power Traveling, March 5, p 4
*Crank, Mending a Broken. F. F. Hemenway, July 30, p 2
*Crank, The Pulley. F. G. Woodward, Jan. 29, p 3
Crank Pins, Hot. A Cause for. F.F. Hemenway, Oct. 29, p 3
Cranks, Mechanical, Sept. 3, p 4
Critic, The Universal, April 9, p 8
Crossing Bridges too Soon, Feb. 19, p. 8
*Cross-Head of a Corliss Engine, Alteration to the. Chas. E. Emery, May 28, p 7
*Crushing Rolls, Buchanan's Improved, Mar. 12, p 4
*Cupolas, Tapping Out and Stopping Up. Thos. D. West, Nov. 26, p 4
Cupolas, Fitting Up. Thos. D. West, Mar. 12, p 4
*Cut-Off in Steam Engines, Most Economical Point of, Aug. 6, p 3
*Cutter, Epicycloidal, for Teeth of Gear Wheels, Sept. 3, p 4
*Cutter, A New Steel Pipe, Nov. 19, p 7

D

Dam, A Big Yuba, Jan. 8, p 7
Decision, An Important Legal, Jan. 1, p 8
Demand and Supply. F. F. Hemenway, March 5, p 1
Detention, A Double Cause for, Sept. 3, p 3
*Diagrams of Engine Practice, Nov. 12, p 2
*Dies. The Two Forms of Threading, Aug. 20, p 4
Discoveries, Important Mechanical, Oct. 29, p 7
*Distilling Apparatus, New, Feb. 19, p 4
*Dog, New Straight Tail, July 9, p 6
Do It Well, Aug. 27, p 8
*Dog in the Manger, Feb. 19, p 3
Drawing Lessons, Mechanical, Aug. 6, p 9
*Draughtsman's India Ink Stand, April 16, p 2
*Draughtsman's Bevel, A. John W. Nystrom, April 23, p 3
*Drawing, Mechanical. Prof. John E. Sweet, July 9, p 5; July 16, p 4; July 23, p 4; Aug. 6, p 6; Aug. 13, p 4; Aug. 27, p 2; Sept. 17, p 3; Oct. 22, p 4
Drawing, Education In, Aug. 13, p 8
Drawing, Free Hand, Advantages of, Dec. 31, p 8
*Drawings and Plans, Method of Arranging and Indexing. Albert F. Hall, Sept. 3, p 6
Drawings, A Direct Method of Copying. Prof. S. W. Powel, May 28, p 6
*Drawings, Sackett's Systems of Working. Chordal, Sept. 10, p 1
Drawings, Blue Process of Copying, Oct. 8, p 6
Drawings, A New Method of Keeping Mechanical. Chas. T. Porter, Nov. 26, p 4
Dress, Our New, July 9, p 8
Drew the Wrong Lever, March 26, p 3
*Drill Press, Newton's Improved Vertical, July 30, p 3
*Drill, New Upright, Oct. 8, p 1
*Drill, New Hand and Power, Oct. 8, p 2
*Drill, Manufacturers' Bench, Nov. 5, p 4
*Dynamo-Electric Machine, The Thomson-Houston, Oct. 22, p 3
*Dynamo-Electric Machine, Improved, July 30, p 5
*Dynamometer, A New Transmitting, Nov. 5, p 6

E

Earnestness in Business Pursuits, July 16, p 4
Edison, What is Doing, Nov. 19, p 4
Education, Technical, March 12, p 3
Education, Special, Dec. 10, p 8
Education, Industrial Common School, Sept. 17, p 8
Elasticity. F. F. Hemenway, May 28, p 1
Electric Enthusiasm, Oct. 29, p 8
Electrical Railway, The Berlin, July 9, p 4
*Elevator, Siemens' and Halske's Electric, Oct. 29, p 6
*Emery Grinder, A New, April 9, p 4
*Emery-Grinding Machinery, New, April 30, p 1
*Emery Polishing Machine, New, May 7, p 3
*Emery Grinder, New, Aug. 27, p 7
*Engine, Improved Compound Pumping, Knowles, Jan. 1, p 1
Engine Discussion, Compound, Jan 1, p 4
Jan 8, p 2
*Engine, The Sciple, Jan. 22, p 3
Engine, A Large Hydraulic Pumping, Jan. 22, p 7
*Engine, The Allen High-Speed, March 5, p 1
*Engine, The Hemenway Automatic Cut-Off, March 19, p 1
*Engine, Rolling Mill of the N. J. Steel and Iron Co., March 19, p 4
*Engine, New Design of Corliss, April 2, p 1
*Engine, Fish's Improved Vertical, April 2, p 3
Engine Building, Some Points In, April 2, p 8
*Engine, A New Type of Compound Pumping April 9, p 1
*Engine, New Small Power, High-Speed, April 16, p 4
*Engine, Improved Corliss Steam, May 7, p 1
*Engine, The Allen High-Speed, May 28, p 4
*Engine, A Portable Threshing, June 25, p 4
*Engine and Pump, New Rotary, July 30, p 7
Engine, Changing the Direction of Motion of a Steam, Aug. 6, p 1
*Engine, The Wheelock, Sept. 3, p 1
Engine and Boiler, Official Test of an, Sept. 24, p 8
*Engine, Westinghouse High-Speed, Oct. 1, p 2
Engine Nomenclature, Steam, Oct. 1, p 8
Engine Economy, Practical Steam. F. F. Hemenway, Oct. 15, p 4; Oct. 22, p 4
*Engine, A New High-Speed, Oct. 22, p 5
Engine, Progress and Development of the Marine, Oct. 29, p 1
*Engine, The New Hartford Automatic, Nov. 5, p 1
*Engine, Lambertville Automatic, Nov. 12, p 7
*Engine, Improved Automatic, Dec. 3, p 2
*Engine, New Automatic Cut-Off, Dec. 10, p 1
*Engine, The Estes Steam, Dec. 17, p 3
*Engine, The Eclipse Traction, Dec. 24, p 1
Engine Business, The Steam, Dec. 24, p 8
*Engine, The Sciple Yacht, Feb. 5, p 4
*Engines, Improved Oscillating, Jan. 29, p 2
*Engines, Setting in Line, No. 4. Joshua Rose,
Engines, Inspection of, Jan. 29, p 3
Engines, Cushion Adjustment In. Prof. S. W. Robinson, Feb. 5, p 1
Engines, High-Speed, A Reminiscence, Feb. 12, p 4
Engines and Tools, Setting. H. Reynolds, Dec. 31, p 1
*Engines, Improved Portable and Detached, Feb. 26, p 4
*Engines, Portable, for Driving Saw Mills and Threshing Machines, April 16, p 1
*Engines, Compound and Automatic Cut-Off. F. F. Hemenway, June 25, p 4
*Engines, Comparison Between Different Types of. Chas. A. Hague, Aug. 27, p 6
Engineers' Licenses, May 21, p 8
Engineer, The Traveling, July 30, p 7
Engineers, Poorly Trained Locomotive, June 25, p 8
Engineers Always Secured, Why are Not Good, Dec. 3, p 8
Engineering Reminiscences. J. C. Hoadley, Jan. 8, p 5
Enterprise, Mechanical, Oct. 8, p 7
Exchanges, Among our Western, Oct. 15, p 8
Exhibition, Another Special International, Jan. 1, p 8
Exhibition, The English Wool, Jan. 15, p 8
Exhibition Society, Finances of An, March 19, p 7
Exhibition, New England Industrial, April 23, p 9
*Exhibition Notes, German, Oct. 1, p 3
Exhibition, Engineering, Nov. 19, p 5
Exhibitions, Permanency in Industrial, Feb. 5, p 8
*Exhibitions, New England Industrial Organization and, Feb. 26, p 1
Exhibitions, Foreign Industrial, March 5, p 8
Exhibitions, A Good Year for Industrial, Sept. 17, p 8
Exhibitions in Boston, Industrial, Oct. 8, p 6
Exhibitions, Boston Industrial, Oct. 15, p 3
*Experiments with Non-Conductors of Heat, May 28, p 3
Experimental Mechanics. Oberlin Smith, June 18, p 6
Explainable and Unexplainable. F. F. Hemenway, April 9, p 4
Exposition, The New Industrial, Aug. 6, p 1
Exposition, The Atlanta, Oct. 22, p 8
Exposition, Atlanta Cotton. C. J. H. Woodbury, *Dec. 3, p 2; Dec. 10, p 4; Dec. 17, p 2; Dec, 24, p 2
Exposition at Berlin, Hygienic and Life-Saving, Dec, 17, p 7
Exposition, The International Cotton, Aug. 20, p 8
Explosions, Dust, Aug. 20, p 8
Extracts from Chordal's Letters, Jan. 1, p 1; Feb. 19, p 1; April 9, p 1; April 16, p 2; *April 23, p 2; April 30, p 6; July 16, p 2; *July 23, p 1; Aug 6, p 6; Aug: 20, p 6; Sept. 10, p 2; Oct. 8, p 2; Oct. 22, p 7; Dec. 17, p 6
Equivalents, Personal. Aug. 6, p 8
*Evaporating Apparatus, Sugar, Sept. 10, p 3

F

Factories, Location of, April 2, p 8
*Fair of the New England Manufacturers' and Mechanics' Institute, Sept. 10, p 7
*Faucet, Combination for Excluding Sewer Gas from Houses, Feb. 12, p 3
*Fan or Blower, Suction, Nov. 12, p 6
*Feed Water Heater and Filter, Combined, Feb. 19 p 3
Files, Names and Definitions of, Feb. 5, p 7
Finances of an Exhibition Society, March 19, p 7
Finances and Mechanics, July 30, p 8
*Fire Hydrants. Adjustable Pipe for, Feb. 12, p 2
Fire Brigades in Shops, Aug. 6, p 8
Fishing, Scientific, Jan. 8, p 8
Fits, Making Shrinking, July 30, p 1
*File Sharpening Process, The Sand Blast, Sept. 17, p 4
*Flanging and Straightening Machine, Hydraulic Sept. 24, p 4
Flue, Bursting of a, Aug. 20, p 8

PUBLIC LIBRARY
DETROIT MICH.

Forces, Use of Dangerous, March 26, p 8
Foreign Technical Notes, April 16, p 7; April 23, p 7; April 30, p 7; May 7, p 7; May 14, p 7; May 21, p 7; May 28, p 7; June 4, p 7; June 11, p 7; June 18, p 7; June 25, p 7.
Foremen, Pay of Iron Foundry, June 11, p 8
*Forges, Bradley's Hard Coal Heating, June 11, p 1
*Foundry Cupola, The. Thos. D. West, March 5, p 2
Foundry Matters, Iron, March 19, p 8
*Forgings, Helve Hammer, Oct. 29, p 3
Forgings at the Fair of the American Institute, Dec. 3, p 8
*Fontaine Principle, A New Application of the, Dec. 24, p 3
Free Traders, Collegiate, Feb. 26, p 8
Free Trade Movement, A Fresh, March 12, p 8
Friction Diagrams. E. W. Thompson, May 28, p 4
Fuel, Successful Experiment with Hydro, Jan. 8, p 8
Fuel, Economy of. Wm. J. Williams, Sept. 3, p 6
*Furnace, Mahony's Universal Improved, July 23, p 1
*Furnaces, Regenerative Metallurgical. Jacob Reese, Jan. 29, p 4

G

Gas Burner, The Siemens Regenerative, Dec. 31, p 3
*Gauge Cock, The Fairbairn, Jan. 29, p 3
*Gauge, A New Registering, Aug. 20, p 3
*Gates, Skimming and Flow-off. Thos. D. West, Sept. 17, p 1
*Gauge Cock, Fairbairn Locomotive, Sept. 17, p 7
Gauges, Making Standard, Dec. 17, p 1
*Gauge, A New Surface, Dec. 17, p 7
*Gear Cutter, A New, Jan. 15, p 2
Gears, Lubricating, March 26, p 3
*Gear Cutter, Newton's Automatic, April 30, p 5
*Gear Cutter, A New, Oct. 15, p 3
Girls, How Sensible, Regard Young Mechanics, Gifts, Some Liberal, Aug. 13, p 8
Glues and Cements, Qualities of Some, April 16, p 6
Glass, Cutting and Drilling, Aug. 20, p 5
*Governor, Le Van's Steam Engine, March 19, p 5 March 26. p 8
Governor Test Wanted, A Competitive, April 9, p 8
*Governor, A Hydraulic, May 21, p 4
Governors, Testing Steam Engine, Sept. 3, p 8
*Governor, A New Steam Engine, Dec. 3, p 4
*Grinding Machine, Stove Plate, April 16, p 4; Oct. 8, p 4
*Grate Bar, New Hollow, Sept. 17, p 4
*Guard, Heaton's Safety, for Emery Wheels and Grindstones, Dec. 3, p 4

H

*Hammers, New Hide Faced, July 23, p 7
*Hammer, The Standish Foot Power, Sept. 3. p 3
*Hanger for Shafting, A New Adjustable, Dec. 17, p 7
*Hangers and Coupling, Improved, June 4, p 4
Heat, Value of the Study of the Mechanical Theory of. A. R. Wolff, Jan. 22, p 1
Holiday for Machinists, A Saturday Half, June 25, p 8
*Hudson, W. S., Sketch of Life and Work of, Aug. 20, p 5
*Hydro-Motor, Fleischer's, Oct. 29, p 2

I

Ignition, Spontaneous, March 19, p 5
Improvements, Some in Our Columns, April 16, p 8
Insurance, Systems of Life, Jan 1, p 9
*Indicators, Appliances for, Jan. 22, p 4
Insurance, Co-operative or Assessment Life, Feb, 12, p 8
*Injector, New Duplex, March 12. p 3
*Injector, A New, Dec. 3, p 7
Indicator, New Adaptations of the, March 26, p 8
Internal Pressure of Steam Boilers, March 26, p 8
*Injector, Korting's Universal Locomotive, July 16, p 4
*Indicator, Improvement in the. L. F. Lyne, July 23, p 6
*Indicator, Influence of Time on Pencil Movements of. F. F. Hemenway, Nov. 5, p 7
Industries, Our Silent, Nov. 12, p 8
Institute, A Private Technical, Dec. 17, p 8
Investors, Vagaries of, Jan. 8, p 8
*Indicator Springs, Improvement in Steam Engine, Nov. 19, p 7
Iron, Our Pig Production, March 19, p 3
Iron Business, Development of the, Feb. 12, p 1
*Iron, Feeding and Shrinkage of Melted, Oct. 1, p 4
Iron Trade Prospects, Oct. 29, p 8
Iron and Metal Review. (See page 10 of Every Issue.)
Italian Enterprise, Sept. 3, p 9

J

*Jack, Steel Screw Lifting. March 12, p 4
Joints, Gum, July 30, p 1
Joints, Putty, Aug. 6, p 1
Journals, Heating of, Nov. 26, p 1

L

*Lathe, Barnes' New Velocipede, Jan. 1, p 4
*Lathe, A New, Jan. 15, p 2,
*Lathes, New Bench and Hand, Feb. 5, p 4
*Lathe, New Hand, Feb. 12, p 3
*Lathe, Improved Screw Cutting, March 5 p 3
*Lathe, An Improved Hand, June 11, p 1.
*Lathe, New Eighteen-Inch, July 30, p 1
*Lathe, The Spencer, Aug. 6, p 7
*Lathe, Engine, at the New England Fair, Sept. 10, p 7
*Lathe, New Engine, Sept. 17, p 1
*Lathe, A New Engine, Sept. 24, p 5
*Lathe, New Engine, Oct. 1, p 1
*Lathe, Screw Cutting Engine, Oct. 8, p 3
*Lathe and Screw-Machine, Combination, Oct. 22, p 3
Lathes, Suggestions Upon Engine, Oct. 29, p 2
*Lathe, New Hand, Nov. 19, p 7
Labor, Position of Unskilled, Nov. 19, p 8
*Lathe, Engine, New Twenty Inch Swing, Dec 3, p 1
*Lathe, New Fifteen-Inch Screw Cutting Engine, Dec. 17, p 1
Law of Mechanical Compensation, Feb. 26, p 8
Letters from Practical Men. (See Special Index on Page 3)
Letters from Practical Men, Our, Jan. 1, p 8.
*Lighting Broadway, New York, with the Brush Electric System, Jan 1, p 3
Literary Notes. (See page 9 each issue.)
Light, Success of the Brush Electric in New York City, Jan. 8, p 8
Lighthall, Wm. A., Jan. 22, p 8
*Lighthall, Wm. A., Sketch of the Life and Work of, Jan. 29, p 1
Light, Cost of the Electric, April 23, p 8
Light, The Desire for, Aug. 27, p 8
Lighting, Fires from Electric, Nov. 19 p 1
Lighting, Machinery for Electric, Dec. 10, p 1
Locomotives of 1880. W. Barnet Le Van, Jan. 15, p 2
Locomotives, Reckless Running of, Jan. 22, p 8
Locomotives, Wiping, May 14, p 8
*Locomotive, The Shaw Four Cylinder, June 18, p 1
Locomotives for Fast Passenger Trains, July 30, p 3
Locomotive, Efficiency of the Fontaine, Nov. 26, p 3
*Locomotive, Details of a New Compressed Air, Dec. 24, p 4
Locomotive Building, Dec. 31, p 2
*Locomotive, New Compressed Air, Dec. 10, p 2
*Lubricator, The Barclay, Jan. 1, p 4
Lubricants, Injudicious Use of, Nov. 19, p 8

M

*Machine, New Shaping and Gear Cutting, Jan. 1, p 2
Manufactures (See page 9 of Every Issue)
Machinists' and Engineers' Supplies (See Page 10 of Every Issue)
Man Who Can't, The, Jan. 8, p 8
*Machine, Combined Milling and Die Sinking, Jan. 22, p 3
Machinery Business, Condition and Prospects of the, Jan. 22, p 6
Manufacturers and Mechanics, Brilliant Prospects for, Jan. 22, p 8
Manufactures, Influence of Climate on, Jan. 29, p 8
*Machine, New Power Milling, Feb. 5, p 3
*Machine, Tool Grinding, Feb. 5, p 4
*Machinery, Method of Designating Parts of, Feb. 19, p 4
*Machine, Double-Geared Hoisting, Feb. 26, p 4
Master Mechanics, Position and Influence of, Feb. 26, p 8
*Machine, New Car Tenoning, March 5, p 4
*Machine, New Band Sawing, April 2, p 5
Machine Tool Prospects, April 2, p 8
Machine Shop Productions, April 9, p 8
Manufactures, Promotion of Local, April 23, p 8
Manufactures, Value of Expert Opinion in Establishing, May 7, p 8
*Machine Tools, Some New (Milling and Centering), May 28, p 1
*Machine, Saw Filing, June 4, p 3
Machine Architecture. F. F. Hemenway, June 18, p 4
Machinery, Flouring Mill, July 9, p 1
*Machine, Improved Die Sinking, July 16, p 5
Machine Tool Industry, The, July 30, p 8
*Mandrel, An Improved, Aug. 13, p 3
*Machine, Steam Punching, Aug. 27, p 1
*Machine, Vertical Centering, Aug. 27, p 6
Matter, A Peculiar Property of, Sept. 3, p 8
*Machine Details, Nomenclature of. Oberlin Smith, Sept. 10, p 4
*Machine, Emery Belting, Sept. 17, p 4
Manufacturing, Margins of Profit in, Oct. 1, p 8
*Mandrel, A New Expanding, Oct. 15, p 3
*Machine, Heavy Key-Seat Cutting, Nov. 5, p 4
*Machine, New Centering, Nov. 5, p 7
Machinery Business, Changes in, Nov. 5, p 8
*Machines, Improved, Threading and Cutting, for Pipe and Fittings, Nov. 19, p 1
*Machines, New Wire Straightening and Cutting, Nov. 26, p 4
Machinery, Unstable Location of, Nov. 26, p 8
Machine, A Wonderful and Valuable, Dec. 17, p 6
Mechanical Term, A New, Jan. 8, p 8
Mexican Opportunities, Jan. 29, p 8
Mechanical Engineers Organization, March 5, p 8
Memoranda, Preserving Mechanical. A. Dennett, April 2, p 3
Mechanical Engineers Society, Spring Meeting of, April 2, p 8
Mechanical Engineers, Spring Meeting of the, April 30, p 7
Mechanics, A Branch of Modern, May 14, p 8
Mechanical Engineers, Spring Meeting of the, May 14, p 8
*Mercury Column, An Improved. D. N. Melvin, May 21, p 1
Mechanical Engineers, Am. Society of, Second Regular Meeting of the, May 21, p 2
Mechanical Terms. W. Barnet Le Van, May 21, p 4
Mechanical Engineers, Hartford Meeting of the, May 21, p 8
Mechanics, Habits of Young, May 28, p 7
Mechanical Engineers Meeting, Notes of the. May 28, p 8
Mechanical Esthetics, June 4, p 9
Melt Iron Rapidly, How to. Thos. D. West, July 16, p 7
Mechanical Engineers, Midsummer Meeting of the, July 16, p 8
Mechanic, Only A, July 23, p 8
Mechanical Engineers, Midsummer Meeting of the, Aug. 13, p 8
Mechanical Engineers, Third Regular Meeting of American Society of, Aug. 27, p 3
Meeting, A Profitable, Sept. 3, p 8
Mechanical and Educational Co-relation, Sept. 17, p 8
Mechanic, The Tramp, Oct. 8, p 8
Mechanical Engineers' Meeting, the Next, Oct. 15, p 8
Mechanical Engineers, Annual Meeting of the, Nov. 5, p 8
Mechanics, Individual Advancement of, Nov. 12, p 8
Mechanical Engineers, Second Annual Meeting of the American Society of, Nov. 19, p 2
Mexico, Our Trade With, Dec. 10, p 8
Metric System, The, Dec. 17, p 8
Mechanical Engineers, A New Treasurer of the, Dec. 24, p 8
Mechanical Progress, Reading About, Dec. 24, p 8
*Mine-Exploring Apparatus, The Chrysolite, Jan. 8, p 4
Millwright or Mechanical Engineer? Feb. 5, p 8
*Mills, New Stamping, Feb. 12, p 1
Mining, Placer, by Steam, Feb. 12, p 8
Mining Engineers in Session, March 5, p 7
Misrepresentation. F. F. Hemenway, April 16, p 3
Mistake Corrected, A, June 4, p 8
*Milling Machine, New Gun, June 18, p 4
*Milling Machine, Steam Chest Seat, July 16, p 1
Mining Engineers, Harrisburgh Meeting of the, Oct. 29, p 7
Mining Engineers, Fall Meeting of the American Institute of, Nov. 12. p 7
Mill Floor and its Supports, The. C. J. H. Woodbury, Nov. 19, p 2
Monopolies, How Can They be Restricted, March 19, p 8
Moulds of Green Sand, Dry Sand and Loam. Thos. D. West, May 21, p 6
Moulds, Surface and Bottom of Green Sand. Thos. D. West, May 28, p 4
*Mystery Explained, The. F. B. Allen, Feb. 26, p 2
Moulds, Venting Green Sand. Thos. D. West, June 18, p 2
Motor, Another Wonderful, July 16, p 6
*Moulding Elbow and Branch Pipes Without a Pattern. Thos. D. West, July 30, p 2
Monopoly, The Barbed Wire Fence, Oct. 15, p 8; Nov. 12, p 6
*Moulding Gear Wheels in Dry Sand, or with Cores. Thos. D. West, Nov. 5. p 4
*Moulding Kettles in Green Sand Without a Pattern. Thos. D. West, Nov. 19, p 4
Moulds, Finishing Green Sand. Thos. D. West, Dec. 3, p 4
*Moulding Kettles with Dry Sand Cope and Green Sand Bottom. Thos. D. West, Dec. 17, p 2
Motor, Wanted—A Street Car, Dec, 17, p 8

N

Naval Architecture, The Latest Achievement In, Jan. 8, p 4
Names in Correspondence, Real or Assumed, March 26, p 8
Navigation, Science of Steam, Oct. 8, p 8
Never Too Old to Learn, June 18, p 8
Negro, The, As An Iron Worker, Sept. 3, p 8
Nickel Plating, Process of, May 21, p 7
Niagara, The Water Power of, Sept. 24, p. 2
North Carolina, Manufacturing Resources of. C. J. H. Woodbury, Dec. 31, p 2.
*Nozzle, The Korting Steam Blast, Jan. 15, p 5
Northwest, Opportunities in the, March 19, p 8

O

Observations, An English Machinist's, July 2, p 7
Ocean Commerce, American, Restoring Without Subsidy, Feb. 26, p 9
Ocean Transit, Rapid, Dec. 24, p 8
Odds and Ends. F. F. Hemenway, April 30, p 4
Orders, Accepting, on Long Time, Jan. 29, p 8
Outlook, The Fall, Sept. 24, p 8
*Ovens for Drying Cores. Thos. D. West, Dec. 31, p 4.

P

Pattern Making. L. F. Lyne, Jan. 22, p 3
Patent Laws, English and American, April 2, p 8
Passes, Free to Newspapers, April 30, p 8
Patterns, Stealing, May 7, p 8
*Packing, Improved Steam Piston, June 4, p 2
Patents, Design, on Machinery, Aug. 6, p 8
Patent Office, Publications of the U. S., Aug. 13, p 2
Pay-Day Question, Intemperance and the, Sept. 10, p 8
Patents, Character of New, Sept. 24, p 8
Paper Diet, A, and Paper Steam Engine, Oct. 15. p 2
Patent Decision, An Important, Dec. 17, p 3
Perfection, Drawbacks to, Sept. 3, p 8
Piece Work on Yearly Contract, May 28, p 7
*Piston Rod Packings, Improvements in, July 16, p 1
Planers, About, Feb. 26, p 3
*Planer, Improved Iron, March 5, p 3
*Planer, A New Iron, May 7, p 2
*Planer, Improved Iron, July 30, p 7
*Planer, New Iron, Sept. 24, p 3
*Planing Machine, New, Oct 8, p 1
*Planer, New Rotary, Oct. 15, p 2
*Planers and Shapers, Improved Iron, Nov. 19, p 5
Pocket View of It, March 26, p 9
Poetry, Spring, May 7, p 3
Poles, Tying the North and South Together, Aug. 6, p 8
*Press, Heavy Power, Jan. 1, p 7
*Press, A New, Jan. 15, p 2
*Presses, Improved Newspaper Printing, Feb. 19, p 1
Presses, Improvement in Metal Working, April 9, p 7
Printing Presses, Cylinder, Hints on Making Ready for, Aug. 13, p 3
Presses, Cylinder, Hints on Making Ready for, Oct. 15, p 2
Progress, Modern Mechanical, Due to the Many, Aug. 27, p 8
*Printing Presses, Some New Devices in, Oct. 1, p 7
*Press, Improved Adjustable Power, Oct. 15, p 4
*Press, Improved Geared Power Dec., 31, p 5.
Propeller, History of the Screw, Oct. 15, p 7
*Press, A New Reducing, Nov. 12, p 1
Problems, Some Industrial, Nov. 26, p 8
*Planer, New Plate, Dec. 10, p 4
*Pressure Regulator, New, Dec. 31, p 7.
*Prison Competition, Restricting, Dec. 10, p 8
*Pulley, The Medart Wrought Rim, March 12, p 4
*Pulley, New Disc, March 19, p 2
*Pulleys and Other Castings, Splitting, Thos. D. West, Oct. 15, p 7
Pumping Machinery. Chas. A. Hague, Feb. 19, p 2; Feb. 26, p 4; March 12, p 1; *March 26, p 2; *April 9, p 2
*Pump, Novel Submerged, April 30, p 4
*Pump, A New Steam, July 2, p 1
*Pump and Condenser, New Compound Air, Dec. 31, p 1.
*Pump Bob for the Hecla Mine, New, July 9, p 1
*Pump, The Davidson Steam, Aug. 6, p 1
*Pump, Fox's New Boiler Feed, Aug. 6, p 7
*Pump, New Vertical Steam, Aug. 13, p 3
*Pumps, New Independent Condensing Apparatus and, Sept. 24, p 7
*Pump and Condenser, The Davidson Independent Steam, Oct. 1, p 1
*Pump, Steam, The Worthington, as it Was and Is, Oct. 22, p 1
Pumps at High Altitudes. A. Falkenau, Oct. 22, p 3
*Pump and Condensers, Independent Air, Dec. 17 p 4
*Pyrometer, Investigations Concerning the Graphite, July 2, p 3

Q

Questions and Answers. (See Page 9 of Every Issue.)
Questions, Asking and Answering, Feb. 19, p 1

R

Railroad Building, An Excess of, Oct. 1, p 8
Railroad Building During 1880, Jan. 29, p 7
Railroad Economy, Elements in, Aug. 20, p 8
Railroad Inventions, Recent and Needed, Oct. 1, p 3
Railroad Progress, Extraordinary, Dec. 17, p 2
Railroad, Success of a Two-Foot Gauge, April 23, p 7
Railway Master Mechanics, Annual Convention of the, July 2, p 8; July 9, p 9
Rail Tests, German, Aug. 27, p 2
Rails, Chemical Composition of Steel, March 26, p 7
Rails, Testing Steel, March 12, p 2
*Ratchet Drill, New Hand, July 16, p 3
*Reductor, New, Jan. 15, p 3
Relic, A Revolutionary, Aug. 6, p 3
Request and Explanation, Jan. 15, p 8
Retrospective and Prospective, Jan. 15, p 8
Rewarding an English Inventor, April 23, p 8
*Riveting, Hydraulic, Aug. 20, p. 7
*Rolls, Bending, Dec. 10, p 4
*Rolling Mill, The First in America. W. H. Harrison, June 11, p 4
Rusting, To Keep Machinery from, Dec. 24. p 4

S

*Safe, An 8-Flange Fire Proof, May 28, p 2
Salesmen, Restricting Traveling, Aug. 27. p 8
*Saw Grinding Machine, Aug. 13, p 7
*Saw Gumming Machine, March 5, p 3
*Saw Table, Double Circular, Nov. 12, p 5
*Saw Table and Horizontal Boring Machine, Nov. 26, p 1
Science, Misapplications of, Oct, 1, p 8
School of Mechanical Engineering, of Ohio State University, Sept. 17, p 7
School of Tools and Machinery, A,—Peter Cooper's New Enterprise, Oct. 8, p 4
Schools, Fostering Technical, May 7, p 3
*Scrap Heap Philosophy, Oct. 15, p 1
Screw Cutting on the Engine Lathe. Frank H. Richards, Aug. 13, p 1; Aug. 20, p 4; Oct. 15, p 5
*Screw Cutting, Gearing for, Dec. 17, p 6
*Screw Propulsion, An Improved Method of. John B. Root, Nov. 26, p 6; Dec. 3, p 6
Seawanhaka Case, Latest Testimony in the, April 16, p 8
Selling Machinery, Imperfect Methods of, Feb. 12, p 8
Self-Confidence, Aug. 20, p 7
Shafts, Putting up Line. H. Reynolds, Dec. 31, p 1
Shafting Question, Seeking Light on the, May 14, p 2
Shipbuilding, Iron and Wooden, Feb. 12, p 8
Shipbuilding on the Clyde, April 2, p 3
Shop, How to Start a, May 7, p 8
Shop Incident, A, July 9, p 2
*Shop Kinks. L. F. Lyne; No. IV., Ratchet Drilling Device, Jan. 29, p 2; No. V., Device for Applying Studs, Feb. 12, p 3; No. VI., Wrenches for Finished Work, March 5, p 4; No. VII., Nut for Removing Studs, March 12, p 3; No. VIII., Treadle Motion for Foot Lathes, March 26, p 3; No. IX., A Handy Drilling Jack, April 9, p 2; No. X., A Convenient Small Split Pulley, May 14, p 6; No. XI., Boring Tools, Aug. 13, p 2; No. XII., Packings for Hydraulic Wheel Presses, Aug. 20, p 6; No. XIII., Device for Raising and Lowering Planer Crossheads, Sept. 3, p 3; No. XIV., Running Lines and Putting up Shafting, Sept. 17, p 2; No. XV., Single Screw Cutting Device, Sept. 24, p 3; No. XVI., Setting Engines and Squaring Shafting, Oct. 1, p 6; No. XVII., Lining and Leveling Shafting, Oct. 8, p 2; No. XVIII., Peculiar Belt Transmission, Oct. 15, p 7; No. XIX., Gauge for Squaring Shafting.—How to Hang Counter Shafts with a Bradley Cushioned Hammer, Oct. 29, p 6; No. XX, A Handy Lathe Appliance for Turning Spheres and Other Shapes, Nov. 5, p 6; No. XXI., Use and Abuse of Mandrels.—Treatment of Babbitt Metal,

620.5 V.4

Nov. 19, p 6; No. XXII., A Useful Tool for Slotting Machines, Dec. 3, p 3; No. XXIII., Gearing for Screw Cutting, Dec. 17, p 6; No. XXIV., Wrinkles in Gearing, Dec. 24, p 7
Shop Practice, Varying Examples of, April 16, p 8
Shops and Grounds, Adornment of, Sept. 3, p 8
*Shops at Altoona, The Penna. R. R., Aug. 20, p 1
Shops, Forced Conclusions in, July 9, p 8
Shops, Machine, When and How to Build. A. H. Emery, May 14, p 1
Shops, The Pullman Palace Car, Dec. 31, p 4.
Shopmen, Successes and failures, of, July 16, p 8
Silk, American Manufacture, March 12, p 8
Skill, Reward of Special, June 11, p 8
Skill, The True Value of Mechanical, Dec. 24, p 8
Society, A Machinists', June 25, p 8
Society, A Mutual Aid, Nov. 12, p 2
South, Manufacturing at the, Oct. 8, p 3
Sparks, Nov. 12, p 2
Specialties, Study of Foreign, Jan. 29, p 8
*Sprinklers, Trial of Automatic Fire, July 9, p 2
Staff, An Addition to Our, July 9, p 8
*Staff, Test, for Testing and Dressing Faces of Burrs, Oct. 1, p 5
Standard Sizes. F. F. Hemenway, May 7, p 2
*Steam Engine, Two Cylinder, Vertical, Dec. 31, p 2.
Steam at Maximum Efficiency, Ratio of Expansion of. Prof. R. H. Thurston, July 30, p 4
Steam Bouncer, A, July 16, p 6
*Steam Chest for Cooking Canned Fruits, Etc., June 11, p 3
Studs, Drilling Out Broken, Aug. 20, p 7
Steam, Drilling Holes to, Aug. 27, p 1
*Steam Fitting Contingencies. Wm. J. Baldwin, March 19, p 1
*Steam Generator, Melvin's, March 26, p 4
*Steam Generators, Improvements in Bate's, Feb. 12, p 4
*Steam Racer, A. F. G. Woodward, Jan. 8, p 7
Steam Jurymen, April 30, p 8
Steamers, Safety of Excursion, Sept. 10, p 8
Steamships, American, Aug. 27, p 7
Steamship, An Immense, July 16, p 3
Steamship Shafts, Broken, Nov. 26, p 8
*Stenograph, The, May 21, p 6
Stevens' Institute, New Machine Shop at the, April 23, p 8
Steel, Different Varieties of, April 2, p 2
Steel, Heating, Aug. 27, p 1
Steel, Mild, in the Workshops, June 4, p 3
Steel, The Temper of, Oct. 29, p 4
Stock Taking, Hurried, Feb. 12, p 9
Stove Trade, The, Dec. 10, p 1
Strikes, Commendable, May 21, p 8
Strikes, Two Suggestive. May 14, p 9
Students, A Machine shop for, June 4, p 8
Studs, Size Plates for, July 23, p 1
Study, What Shall I, July 30, p 8
Subsidies to Corporations, Government, March 5, p 8
Suggestion, A Good, Sept. 3, p 8
Suggestions for Improvements, March 5, p 8
*Superior, The. E. D. Leavitt, Jr., June 25, p 1; July 2, p 1.

T

Tariff Convention, The Coming, Nov. 5, p 8
*Tapers, Proportioning. F. G. Woodward, March 12, p 2
Taps, Correcting the Lead of, Aug. 6, p 3
*Table, A New Computation. E.W. Thompson, Oct. 1, p 5
*Telegraph Work, The Latest Methods of Submarine. Thos. W. Rae, Sept. 17, p 5
*Tempering Appliances. New Heating and, Oct 29, p 1
Tests, Steam Engine, March 19, p 4
*Testing Materials, Machine for, May 14, p 1
Theory and Practice. F. F. Hemenway, April 23, p 4
Time, Correct, by Compressed Air, May 28, p 6
Tinning Iron in the Cold, March 12, p 7
Time, Pneumatic Distribution of, Sept. 10, p 3
Times, A Sign of the, June 11, p 8
Tool, A Useful but Neglected, July 30, p 1
*Tool, A New Combination, Oct. 22, p 7
*Tool, A New Turret Head, Nov. 26, p 3
*Tool-Post for Turning Lathes, Improved, March 19, p 2
Tools, A New Use for Old Machine, Sept. 24, p 7
Tools, Capacity of Shop, July 16, p 8
Tools, Cast Iron Lathe, Sept. 3, p 2
*Tools for Locomotive Shops. A. Dolbeer, Feb. 5, p 2
Tools, Old and New Machine, Aug. 27, p 8
*Tools, Some New Shop, Oct. 29, p 4
Topics this Week, Some of Our, Sept. 3, p 9
*Torpedo System, Capt. Ericsson's Submarine, Sept. 24, p 1
*Tricycle, The. F. G. Woodward, Jan. 15, p 4
Trade Myths, July 2, p 8
Trade, The Best to Learn, Dec. 24, p 8
Trade Unions, Manufacturers' and Workmen's, April 16, p 8
Trades Organization, Proscribing Workmen for Belonging to a, May 7, p 8
Trades, Learning Two, March 19, p 8
Trades Unions. F. F. Hemenway, June 11, p 2
Transit Nuisances of Two Cities, March 5, p 8
Traveling Notes. A. L. Holley, Sept. 24, p 2
*Tubes in Steam Boilers, Holding Power of, July 9, p 7; July 16, p 2
*Tunnel, Hudson River, New Method of Driving the, April 23. p 1
*Tunnel, Testing the Hudson River, Sept. 17, p 3
*Turbines on Horizontal Shafts. April 2, p 4
*Twist Drill and Tool Grinding Machine, May 21, p 4

U

Unions, Steam Fitters', Improvement in, Nov. 19, p 7

V

*Valve, a Self-Packing. H. F. J. Porter, Dec. 3, p 4
*Valve, A New Globe, Aug. 6, p 3
*Valve, Fish's Improved Variable Cut-Off, March 5, p 4
*Valve Gear, New, April 23, p 4
*Valve, Johnson's Balanced Slide, May 14, p 2
*Valve, Link Motions of the Slide. Melville Clemens, June 25, p 7
*Valve, New Slide, Aug. 20, p 4
*Valve, The Slide. Melville Clemens, April 30, p 2
*Valve, The Richardson Anti-friction Slide, July 16, p 7
*Valve, Triple, Westinghouse Air Brake, Oct. 8, p 4
Valves, Grinding Poppet, July 30, p 3
*Valves, Something New in Safety, July 23, p 5
Vacuum, Nature of a, July 30, p 3
Variety, Too Much, Feb, 19, p 8
Ventilation of Industrial Establishments, Artificial, Oct. 15, p 5
Verbosity, Mechanical and Engineering, Oct. 22 p 8
*Vise, Universal, Feb. 5, p 4
Volume IV, End of, Dec. 31, p 8

W

Watchman's Time Detector, A Safe, Jan. 8, p 3
*Washers, Tool for Cutting, May 14, p 3
Wages, How to Obtain More, May 14, p 8
Wanted—How and Why. F. F. Hemenway, June 4, p 4
*Washer Cutting Machines, June 11, p 5
*Water Wheel. New Iron, Sept. 10, p 2
Winter Economies, Jan. 15, p 8
Wire Pointing Machine, Dec. 31, p 3
World's Fair Enterprise, Progress of the, Jan. 1, p 8
*Worthington, Henry R., Sketch of the Life and Work of, Jan. 8, p 1
Worthington, Henry R., Jan. 8, p 8
World's Fair Muddle, Jan. 29, p 8
*Work Holder, New, for Drill Press, April 2, p 5
World's Fair Project, The, May 28, p 8
World's Fair, Shall we Have a, June 18, p 8
Work, A Big Day's, Aug. 20, p 5
World's Fair, Settling the, Aug. 27, p 7
Work, Mechanical, A High Standard of, Nov. 26, p 8
*Wrench, New Lag Screw, March 12, p 3
*Wrench, New Tap, June 11, p 1
Writing on Mechanical Subjects, Dec. 10, p 8

Y

Year, Beginning our Fifth, Dec. 3, p 8

LETTERS FROM PRACTICAL MEN.

A

*Algebra, A Dip Into. Hugo Bilgram, Jan. 15, p 6
Apprenticeship Plan, An, March 26, p 5
Apprentices, How to Help, Nov. 26, p 5
Arcs and Chords. A. B. Couch, June 18, p 5
*Area of a Diagram, New Way to Find the. A. Forrest, May 14, p 5
Arts, Progress in the. Jacob Reese, Feb, 12, p 7

B

Balance, Running, July 23, p 5
Balance, Cushion. C. A. Smith, July 23, p 6
Balancing Engines Perfectly, Sept. 24, p 5
Balancing Engines. C. A. Smith, June 11, p 5
Bearings, Advantages of Long. W. S. Harris, Feb. 12, p 5
Belt, A Short, Nov. 26, p 5
Belt Lacing, Dry Horse Hide, April 9, p 5
Belt Shifter, A Cone, Dec. 31, p 7.
*Belts, Transmission of Power. H. T. C. Kraus, May 28, p 5
Belts, Friction Contact and Power of Fred. A. Halsey, June 18, p 6
Belts, Friction of. Sam'l Webber, July 16, p 6
Belts, Experiments With. Fred A. Halsey, Aug. 13, p 6
Belts, Short, Dec. 31, p 7
Belting Question. F. F. Hemenway, Jan. 15, p 5
Blacksmith, Position of the, April 23, p 4
Blue Print Sections for Materials. A. H. Campbell, Aug. 13, p 7
Block of Iron, Another Way to Break, Dec. 3, p 6
Boiler Explosions, Prevention of. F. C. Smith, April 23, p 5
Boiler Fixtures, May 28, p 6
*Boiler Explosions and Indicator Diagrams. W. E. Crane, June 11, p 6
Boiler Tubes, Holding Power of. C. R. Roelker, July 30, p 6
Boiler Heads, Cast Iron. R. M. Davis, Aug. 6, p 5
Boiler Explosions. C. M. Miller, Sept. 3, p 5
*Boiler Flues, Swaging. John Wallers, Nov. 5, p 5
Boilers, What Marine Engineers Should Do About Unsafe. H. A. Lohman, Jan. 29, p 5
Boilers that Bag in the Middle, Feb. 12, p 6
Boilers, Horse Power of Steam. John L. Thomas, March 5, p 5
Boilers, Taking Care of Steam, April 23, p 4
Boilers, Locomotive, June 25, p 5
Boilers, Management of Steam, July 16, p 5
Boilers, Care of Steam, July 23, p 5
Boilers, Blowing Off, Aug. 13, p 5
Boilers, Petroleum in. W. E. Crane, Aug. 27, p 5
Boilers, Blowing Off. Wm. E. Crane, Sept. 24, p 5
Boilers, Electricity in Steam, Oct. 1, p 6
Boilers, Priming in Steam. A. H. Goff, Dec. 10, p 6
Book, Ready Reference. Jas. H. Paddock, June 25, p 6
Book, Ready Reference. R. H. Thurston, July 9, p 6; A. H. Campbell, July 9, p 6
Books, Classification of the Subject Matter of Mechanical. Joshua Rose, May 14, p 4
*Boring Bar, An Inexpensive, Aug. 6, p 4
Boring Eight Foot Spiders on 20" Lathe, Dec. 31, p 7
*Brackets for Planer Bolts, Washers and Tools. C. E. Simonds, April 30, p 5
Breaking a Block of Iron, Nov. 19, p 6
Breaking Up Blocks of Iron. J. Hodgson, Dec. 3, p 5
Bureau of Labor Statistics. T. F. Hagerty, May 14, p 6

C

*Cams, High Speed. Chas. H. Benjamin, Dec, 17, p 5
Case Hardening Small Iron Articles. W. S. Harris, Jan. 1, p 6
Case Hardening, Jan. 22, p 4
Case Hardening Mixture, Jan. 29, p 6
Case Hardening. W. S. Harris, Feb. 5, p 5
Case Hardening Mixture. P. Josserand, Feb. 12, p 5
Case Hardening Steel Rolls, April 2, p 6
Cast Iron Boiler Heads and Coroner's Juries. John W. Nystrom, July 30, p 6
Casting Pulleys, Shrinking in. J. W. Thompson, March 12, p 7
Castings, One Cause of Defective Gear. John Snow, March 26, p 5
Castings, Why don't they Shrink Vertically? March 26, p 6
Castings, Some Reasons for Poor, March 26, p 7
Casting, Shrinking of Pulleys in. Olin Scott, March 26, p 6
*Casting Pulleys and Fly Wheels Without a Pattern. Frank C. Smith, March 26, p 6
Catalogues, Making Card. P. Barnes, July 9, p 6
Centering Tool, The Ideal. Irving W. Fox, Dec. 31, p 5.
Centers, Something About, Dec. 24, p 5
*Centrifugal Force, Errors in Computing. Melville Clemens, Feb. 19, p 6
*Center, A square, Nov. 5, p 6
*Chucking a Peculiar Piece of Work. Joshua Rose, April 9, p 6
Circle, Dividing a, into Equal Parts. C. D. Bingham, Aug. 27, p 5
*Circle, Dividing the. F. G. Woodward, Oct. 15, p 6
*Clutches, Construction of Friction, March 26, p 6
Coal per Horse Power for Steamboats. Chas. E. Hyde, Dec. 31, p 5.
Co-operation of Pattern Makers and Moulders. March 5, p 5
*Cone Pulleys, Laying Out. Otto Fuchs, Feb. 5, p 6
Condensing Surfaces in Steam Cylinders. Prof. John E. Sweet, Nov. 19, p 6
*Condenser, A New. Isaac H. Davis, Jan. 22, p 5
Conservation of Force and Energy, Law of. Melville Clemens, June 11, p 6
Conservation of Force, Does it Conserve? John F. Allen, June 25, p 7
Copes, The Drawing Down of Green Sand. Thos. D. West, April 16, p 5
Core Prints, More About, March 26, p 7
Cores and Core Prints, Another Method for Making. Olin Scott, April 2, p 5
Core Prints, April 23, p 5
*Core Box, Adjustable. John W. Nystrom, May 14, p 6
Cores and Core Prints, Making, May 28, p 4
Core Pulley Diameters. Prof. J. F. Klein, Nov. 12, p 5
*Counter, Electric Revolution. D. Pratt Wright, Feb. 19, p 6
Counterbalancing Engines. J. H. Killey, Feb. 19, p 7
Counterbalancing Engines, March 12, p 5
*Counterbalancing Engines. G. W. Pierson, March 19, p 6
Counterbalancing Engines. Robt. D. Kinney, April 2, p 5
Counterbalancing Engines, April 23. p 5
Counterbalancing Engines. Robt. V. Kinney, May 14, p 5
Counterbalancing Engines, May 28, p 6
*Counterboring Tool, Ingenious. Chas. S. Beach, March 5, p 6
Coupling, A Defect in Oldham's Shaft, Sept. 10, p 5
Couplings, Shaft, and Straight Shaft. W. M. Dixon, March 12, p 6
Couplings, Patents on. W. B. Dunning. March 12, p 7
Couplings, Hangers and Boxes, Jan. 22, p 4
Couplings, Something About. F. H. Richards, Feb. 5, p 4
Couplings, Fitting Tapering Shaft. P. Josserand, Feb. 19, p 6
Couplings, Shaft, Feb. 26, p 5
Couplings—A Bad Way and Better Ways. Oberlin Smith, Feb. 26, p 6
Couplings, Shafts and. Alex. McKay, March 5. p 6
Couplings, Another Style of Shaft. A. W. Fox, March 5, p 6
*Coupling, A Well Tried Shaft. Joshua Rose, March 19, p 7
*Couplings for Light Shafting. Ambrose Webster, March 19, p 7
*Coupling, The "Plank Check," March 26, p 5
Coupling, Why the Collins was Designed. W. B. Dunning, March 26, p 7
Covering for Steam Pipes. W. E. Crane, Oct. 22, p 6
Cupola, Work of a Small. Geo. M. Holmes, Feb. 5, p 7
Curves and Triangles. C. B. Longnecker, Sept. 24, p 5
Cylindrical Sizes, Maintaining Standard. S. W. Goodyear, Jan. 1, p 6
Cylindrical Work, Finishing. C. C. Hill, Feb. 26, p 5

D

Day's Work, A. F. G. Woodward, Jan. 8, p 7
Dephosphorizing Process in Litigation, A. Jacob Reese, April 30, p 5
*Diagrams from Compound Engines. C. E. Jones, Aug. 13, p 6
Dies for Screw Threads, Making. W. S. Harris, July 23, p 6
Does it Stop? April 30, p 5
Dog in the Manger Patents. Arthur Cone, March 19, p 5
*Dogs, Two Tailed, Sept. 3, p 5
*Dog, Another Ready to be Let Loose, March 12, p 7
Draught, A Question Upon Chimney. A. S. Whitcomb, Dec. 3, p 5
Draught, Efficiency of a Forced. P. Barnes, June 11, p 6
*Draughting Instrument, A Useful. W. B. Cogswell, April 2, p 6
*Draughtsman's Instrument, A Simple. A. Forrest, May 7, p 4
Draw Square Bolt Heads, How to, May 7, p 6
*Drawing, Another Plan for. G. H. Smith, May 14, p 6
*Drawing Board, A Movable. M. Otto Bellingrodt, Oct. 15, p 6
Drawing Boards. R. Grimshaw, Oct. 15, p 7
*Drawing Boards and T-Squares. Frank H. Pond, Nov. 5, p 6
*Drawing, Chordal's Bolt, June 18, p 5
Drawing, Chordal's Bolt. Robert V. Kinney, May 14, p 5
Drawing, Instruction Wanted, May 14, p 5
Drawing, Mechanical, Questions Answered, July 23, p 6
Drawing, More About Mechanical, May 21, p 5
*Drawing, Points in Machine. C. E. Simonds, Mar. 5, p 6
Drawing, Questions in Mechanical, July 9, p 6
*Drawing Room Matters. Robert Grimshaw, Sept. 3, p 5
*Drawing Squares, Hexagon and Octagon Bolt Heads. N. H. Baldwin, May 14, p 5
Drawing System, Review of Sackett's, Oct. 22, p 9
*Drawing Toothed Wheels, Method of, Jan. 15, p 7
*Drawings, Different Ways of Projecting, March 5, p 7
Drawings, Essentials for Mechanical, June 18, p 4
*Drawings, Exceptions to Chordal's Method for. Otto Fuchs, May 7, p 6
Drawings, Explanations and Suggestions Regarding Mechanical. Prof. S. W. Powel, June 11, p 5
Drawings for Use, Preserving, June 25, p 6
Drawings, How to Preserve. J. D. Cox, Jr., Mar. 12, p 5
Drawings, Importance of Making According to Technical Rules. Wm. H. Thorne, May 7, p 5
Drawings, Machinists Who Can't Read. C. C. Hill, Aug. 20, p 3
Drawings, Mechanical. L. O. Danse, May 14, p 4
Drawings, Method of Copying, May 14, p 4
Drawings, Other Considerations in Mechanical. J. J. Wilson, June 11, p 5
Drawings, Practical Shop, May 28, p 6
Drawings, Projection of. A. Falkenau, Jan. 15, p 6
Drawings, Projections and Conventionalities. Oberlin Smith, Feb. 12, p 8
Drawings. Quirk on Machine, March 5, p 7
Drawings, Shaded, Feb. 12, p 7
Drawings, Shading. F. C. Smith, March 19, p 5
*Drawings, Shaded Line. D. M. Carter, Feb. 12, p 6
*Drawings, Shading of, Wm. O. Webber, Jan, 22, p 5
*Drawings, Some Considerations in Making, May 14, p 6
*Drawings, Suggestions upon Mechanical. Otto Fuchs, March 12, p 6
Drawings That Don't Show What Parts to Finish, June 4, p 5
Drawings that Won't Stay in Good Order, May 14, p 4
Drawings, Technicalities in Working, June 18, p 5

E

Emery, Use on Journals. C. C. Hill, Jan 22, p 4
Emery Wheels, Information Wanted On. W. S. Harris, March 5, p 5
Engine, A Rickety, April 16, p 5
Engine, Explanation in Regard to an Arkansas Oscillating. Jas. W. Bocage, May 7, p 4
Engine, Puzzled by a Compound. Chas. S. Beach, May 28, p 5

Engine, The Mississippi Again, June 18, p 5
Engine Test, An "Arkansaw," April 9, p 5
Engine, The Ideal, Sept. 3, p 4
Engine, That Nigger Again. William E. Herrick, Sept. 24, p 6
Engines, Overhead Direct Connected. C. C. Hill Dec. 24, p 5
Engines, Getting up Steam and Starting Marine, Dec. 31, p 5.
Engines, Pounding in Steam, Sept. 3, p 5
Engines, Two Notable, Aug. 27, p 5
Engineering Explanation, An. Geo. H. Barrus, Feb. 19, p 7
Engineering, Marine, March 12, p 5
*Engineering Notes. Harris Tabor, April 9, p 6
Etching Metals, Mixtures for. Wm. O. Webber, Aug. 13, p 6
Exhibits at Atlanta, Southern Mechanical. Richard Tozer, Dec. 31, p 6.

F

Face Plates in Lathes, Truing Up Work On, Dec. 10, p 7
*Feeds, Slow, April 2, p 6
Finishing Cast Iron, Allowance for, Sept. 3, p 5
*Fitting Split Pulleys, Couplings, etc. H. Norton, Feb. 5, p 6
*Flask, New Form of, Sept. 3, p 5
Floor Beams, Strength and Dimensions of. Augustus Schwaab, Dec. 10, p. 6
Floor Beams Strength and Elasticity of. C. J. H. Woodbury, Dec. 24, p 6
Floors. Machine Shop. H. W. Pond, Jan. 1, p 7
*Flues, Expanding, Aug. 6, p 4
*Fluting a Tap. W. Dicks, Dec. 17, p 6
Foreman and the Foundryman, The. F. H. Richards, Jan. 29, p 5
Foreman, A Crusty and Slovenly, May 21, p 5
Foreman Question, The, June 4, p 5
*Foundry Device, A New, Oct. 1, p 6
Fuel, Desultory Remarks on the Economy of. David N. Melvin, Sept. 24, p 6
Foundry Economies, Iron, Nov. 26, p 5
Foundry Matters, March 5, p 6
Foundry, Observations in a Lincoln (Neb.). J. E. McConnell, Jan. 15, p 5
Foundry Work, Some Kinks in, June 11, p 6
Foundryman, Misconceptions of A. J. P. Mullin, Feb. 12, p 5
Foundries, Progress in, Feb. 19, p 7
Friction or Adhesion. A. G. Sargent, March 5, p 5

G

*Gauge, Adjustable Surface. John Franzen, Sept. 10, p 6
*Gauge, A Planer. G. Thompson, Jan. 29, p 6
Gauges, Benefits of Standard. S. W. Goodyear, Jan. 29, p 6
*Gauge, New Surface. Prof. Chas. J. King, March 19, p 5
Gauges, Progress Towards Securing Standard. Geo. R. Stetson, July 30, p 5
Gauges, Solid, Jan. 22, p 4
Gauges, Variation of Wire, Jan. 8, p 6
Gear Cutting, Devices for. C. C. Hill, Aug. 20, p 3
Gear Cutters, The Set of. Geo. B. Grant, Jan. 8, p 6
Gear Cutting Attachment, Mac's, April 30, p 6
Gears and Tapers, Cutting, April 30, p 6
Gears, Cutting Small, April 16, p 5
Gears, Cutting in a Lathe. C. C. Hill, Sept. 24, p 6
Gravity the Force of Unbalanced Matters, Aug. 6, p 4

H

Hardening in Liquids and Compounds: Two Sides to the Question; Both Sides Right. T. F. Hagerty, Dec. 3, p 5

I

*Inaccuracies in High Speed Indicators, Dec. 24, p 6
*Indicator Diagrams and Boiler Explosions. W. E. Crane, June 11, p 6.
Indicator Rig, A Handy. Isaac H. Davis, Feb. 12, p 6
*Indicator, What it Will Show. D. Ashworth, April 30, p 4
*Indicator Cards, A Pair of Queer. F. A. Scheffler, April 9, p 5
Interchangeable, Making Parts Without Standard Gauges. Peter Josserand, Jan. 29, p 5
It Does Stop. E. E. Clark, May 21, p 6

J

*Joint, a Belt. Albert Baker, March 19, p 6
Journal, Finishing a Steel, Feb. 5, p 6
Journals, Fitting Up. H. Norton, Jan. 1, p 6

K

Key, A Special, Dec. 17, p 5
Key, Fitting A, Dec. 10, p 6
Key Ways in Shafts, Proportioning. Wm. P. Canning, May 28, p 5

L

Laps and Port Openings, Calculating. John C. Dean, May 14, p 6
Lathe Builders, Hints to. A. Phelps, Jan. 8, p 7
Lathe Dog Plain July 30, p 5
*Lathe Screw, Device for Taking up Lost Motion on a, Dec. 24, p 6
Lathe Shears, Abuse of, Dec. 31, p 5.
Launches for Pleasure, Steam. Rufus G. Fairbanks, April 30, p 5
Locomotive Brasses, Cleaning. Thos. W. McCullough, Oct. 1, p 6
Locomotive Questions Answered, Some. Burnham, Parry, Williams & Co., Dec. 31, p 7.
*Locomotives, High Speed. F. G. Woodward, April 16, p 6
Locomotives, Mogul and Consolidated. Wm. O Webber, Aug. 13, p 6
Locomotives, Suggestions for Building. W. B. Dunning, Nov. 19, p 6
Lubrication of Machinery. Frank H. Richards, Jan. 1, p 6
Lubrication, Plumbago for. Wm. J. Williams, Jan. 15, p 7
Lubrication, Qualities of Plumbago for. Orestes Cleveland, Jan. 1, p 6

M

Machinist, The, is he Unclean, Jan. 8, p 6
Machinists' Mistakes, March 19, p 6
Machinery Samples. W. S. Harris, Jan. 8, p 6
Mandrels, About, Dec. 31, p 7.
*Mandrels, Use and Abuse of. C. E. Simonds. Dec. 10, p 6
Master Workmen, April 23, p 5
Measures, How to and How Not to. S. W. Goodyear, March 19, p 5
Measuring by Decimals of a Foot. C. C. Collins, Aug. 13, p 6
Measurements, Standards of. John Ortton, Sept. 3, p 4
Measurement, Standards of. Jas. A. Taylor, July 16, p 5
Measuring the Same Length, Differences in. Olin Scott. March 5, p 5
Melting, Fast. Edward Kirk, Dec. 31, p 6.
Melting of Iron, Fast. Edward Kirk, June 18, p 6
Metallurgy, Progress in. Jacob Reese, Feb. 26, p 5
Metric System, Can our Mechanics Use the. P. Barnes, May 14, p 6
Metric System, How it Works Commercially. Olin Scott, July 30, p 6
Mill Floors, Strength of. Joseph Kirk, Dec. 31, p 7.
Milling Cutters, Making, Aug. 13, p 6
Milling Machine, The Largest. John J. Grant, Jan. 29, p 6
Milling Machine, The Largest. Frank C. Smith, Feb. 12, p 5
Moulder, Another Replies to Critics. M. A. Kane, Feb. 12, p 7
Moulder Answers a Complaint, A., Feb. 5, p 5
*Moulders and Pattern Makers, Hints to, Feb. 5, p 5
Moulders and Pattern Makers. R. D. Kinney, Feb. 5, p 4

N

Nickel Plating. W. S. Harris, July 16, p 5
Nomenclature, Steam Engine, Aug. 13, p 6
Notes of a Foreman and a Foundryman. "Old Chip" Answers, Jan. 22, p 5

P

*Patent, A Valuable Specimen. G. B. Grant, Feb. 12, p 6
Pattern Makers, Why Unjustly Blamed, Jan. 15, p 5
Pattern Shop Machinery. J. P. Mullin, Feb. 19, p 5
*Pattern Shops, Tools for. J. S. Graham, March 26, p 5
Patterns, Forethought in Making. T. F. Hagerty, April 2, p 6
Patterns, Using, Instead of Drawings. B. Wilson, May 21, p 6
Patterns, Varnish for, March 26, p 6
Physics, Molecular. Jacob Reese, April 16, p 4
Pickling Platforms, Aug. 27, p 4
*Pipe, Device for Turning Gas. L. O. Danse, May 14, p 4
*Pipes, Some Reasons for Crooked Threads on. Wm. J. Baldwin, April 9, p 5
Piston Packing, A Durable, Feb. 19, p 5
*Piston Rod Packing, Age of a Valuable Style of. Charles W. Copeland, May 14, p 5
*Piston Travel, Illustration of. W. E. Crane, March 19, p 6
*Planer Device, A Good Iron. J. J. Newbaker, Feb. 26, p 6
*Planer Device, Iron. George Roberts. April 16, p 6
Planer Tool, A, Aug. 6, p 5
*Planer Tools, Shapes of, April 9, p 7
Planers, Improvements for Iron. H. Norton, Feb. 19, p 6
Planers, Suggestions for Iron. D. E. Sherman, April 2, p 6
*Planers, Tools for. C. C. Hill, Oct. 15, p 6
Power Required to Drive Wood Working Machinery. Samuel Webber, Jan. 22, p 4
Problem, A Solution of Starting Bar's, Dec. 31, p 5
Prejudices, Shaft Coupling. Olin Scott. March 12, p 6
Provincialisms, Mechanical, April 9, p 6
Pulley Arms, Odd or Even. E. E. Josef. May 7, p 6
Pulley Arms. John B. Guinn, April 23, p 6
Pulley Patterns, How to Construct, Aug. 27, p 4
Pulley Patterns, Making, April 23, p 6
Pulley Scheme, Chordal's, Sept. 3, p 5
Pulleys, Cone, Oct. 29, p 5
Pulleys, Even and Uneven Arm. J. E. McConnell, March 12, p 7
*Pulleys, Moulding. Geo. E. Stauffer. April 23, p 5
*Pulleys, Moulding, May 14, p 4
Pulleys, Objections to Tight and Loose Upon Main Shafts. C. E. Simonds, May 21, p 5
Pulleys on Line Shafts, Loose. E. E. Josef, July 16, p 5
*Pulleys, Tight and Loose. C. E. Simonds, Nov. 19, p 6
Pulleys, Tight and Loose. C. E. Simonds, April 9, p 7
Pulleys, Turning Wooden, Aug. 6, p 5
Pulleys with Equal and Unequal Arms. J.B. Guinn, Feb. 26. p 6

Q

Quacks, Mechanical, May 7, p 4

R

Random Raps at Practical Men, April 16, p 4
*Ratchet Drilling Device. Albert Baker, March 5, p 7
*Reamer, A New, Nov. 26, p 5
*Reamer for Screw Machines, April 2, p 7
*Reamer or Boring Tool. W. L. Cheney, March 19, p 6
Reamer, The Single Cutter, Dec. 31, p 7.
Reamers, Single Fluted, and Cotton Belts, Dec. 17, p 5
*Rocker Arm (the) Considered, Nov. 12, p 6
Rolls, Building up Wooden, Sept. 3, p 5
Rules that are Puzzling, Dec. 3, p 6
Rules, To Temper the Ends of Steel. W. J. Hall, Nov. 5, p 5

S

Safety Plugs that will Fuse. C. M. Miller, Sept. 3, p 5
*Safety Sleeve, The Dudgeon Tube Expander with. C. R. Roelker, Aug. 6, p 4
*Saw, Making a Hack. W. Dicks, Dec. 17, p 6
School, A Chicago Industrial. T. C. P. Myers, Jan. 8, p 6
Screw Cutting, Change Gears for, Aug. 27, p 5
Screw Cutting, Sept. 17, p 7
Screw Cutting, Fast. Andy D. Howard, Jan. 29, p 6
Screw Cutting, Peculiar Fractional, Aug, 27, p 5
Screw Cutting Without a Backing Belt, Aug. 13, p 5
Screws, Inclined Propeller. Chas. A. Howe, Dec. 17, p 5
Screw Propulsion, Loss of Power in. John F. Allen, Dec. 10, p 6
Screw Propulsion, Principles Involved in. John B. Root, Dec. 24, p 6
*Screw Thread, A New. H. W. Pond, Jan. 15, p 6
Screw Threads, Another Rule for Cutting in the Engine Lathe, Sept. 10, p 5
Screw (The) Reduced to a Lever. J. W. Easton, Sept. 17, p 7
Screws, The Inch Plan in Cutting. Frank A. Rider, Aug. 13, p 6
Screws of Coarse Pitch, Cutting, Dec. 31, p 6.
Scroll Saws, Mounting. John G. Baker, Feb. 12, p 6
Sediment, Location of. W. E. Crane, Aug. 27, p 4
Shafting and Couplings, May 28, p 6
*Shafting, Continuous Pulley Line. A. H. Campbell, Sept. 10, p 6
Shafting, Proportions of Line, Aug. 6, p 6
*Shafts and Couplings, Line, June 18, p 5
Shafts and Couplings, Line, July 9, p 5
Shellac, Testing Bleached, March 19, p 6
*Shop, Plan for a Machine. Sam'l Webber, May 7, p 6
Shop Wrinkles. S. W. Goodyear, Dec. 24, p 6
Shortening the Hours of Labor, June 25, p 5
Shops, Poorly Equipped, Aug. 27, p 5
Slotting Machines, Tools for, Dec. 24, p 5
Snow, Melting in the Streets by Steam. Wm. J. Baldwin, March 12, p 5
Social Position, June 11, p 7
Stays—Do they Stay? A. H. Crawford, April 9, p 6
Steamers for Passengers, Ocean. W. B. Dunning, Nov. 26, p 5
Steamship Shafts, Broken. W. B. Dunning, Dec. 17, p 5
*Steam Heating Device for Shops, May 21, p 5
Steamboat, the Mississippi, June 4, p 5
Steamboats, Western River, June 25, p 5
Steel, A Guide for Hardening. J. E. Wilson, July 30, p 6
Steel, Annealing at Low Heat. S. W. Goodyear, Aug. 6, p 4
Steel, Annealing. Jacob Reese, Aug. 13, p 6
Steel, Annealing, Sept. 3, p 5
Steel, Annealing, July 30, p 5
Steel, Breaking of Annealed. S. W. Goodyear, Aug. 20, p 3
Steel, Exceptions to Rules for Tempering. S. W. Goodyear, Sept. 17, p 7
Steel, Facts About American. S. W. Goodyear, Dec. 17, p 4
Steel, Hardening. S. W. Goodyear, July 9, p 5
Steel, Hardening in Liquids and Compounds. S. W. Goodyear, Oct. 22, p 5
Steel, Hardening, Nov. 5, p 5
Steel. Hardening Cast. S. W. Goodyear, Feb. 5, p 6
Steel, Hardening Large Pieces of, April 16, p 4
Steel, Hardening. S. W. Goodyear, Dec. 3, p 5
Steel, Heating and Tempering. S. W. Goodyear, Nov. 19, p 5
Steel, Hints on Working. S. W. Goodyear, July 16, p 6
Steel Manipulation, Queries Relating to. S. W. Goodyear, Aug. 27, p 4
Steel, Qualities of American and Foreign. S. W. Goodyear, Oct. 29, p 5
Steel, Ready Annealed. Joseph Hoskin, Sept 10, p 6
Steel Rolls, Hardening, April 23, pp 5 and 6

T

*Tapping Holes With Thimbles, May 14, p 4
Tariff Anomalies. W. A. Sweet, Nov. 19. p 5
Terms, Proper Mechanical, April 23, p 6
Thought in the Shop, Lack of Independent, March 19, p 6
Thought, Suppressing Independent, April 30, p 6
Thought, Why Some Mechanics Lack Independent. J. E. Wilson, April 2, p 6
*Tool, A Convenient, June 18, p 5
*Tool Holder, A. George Roberts, April 16,
*Tool Holder, A. L. O. Danse, May 14, p 4
*Tool Post for Lathes. A. H. Campbell, Sept. 10, p 6
*Tool Posts, About. Joshua Rose, May 21, p 5
*Tool Posts, July 9, p 6; July 16, p 5
Tools, Art of Grinding. C. E. Simonds, April 16, p 5
*Tools, Cutting. Joshua Rose, March 19, p 7
*Tools, Shapes of Cutting. Joshua Rose, May 7, p 5
Truing Up Work, A Tool for, Dec. 31, p 6.
Truing Up Work, Device for. H. T. Porter, Dec. 31, p 6.
Truing Up Work and Turning Tapers, Dec. 31, p 6.
Tube Expanding, Sept. 17, p 7
Turning, Cylindrical, March 12, p 7
T-Squares, Attaching the Head to. Prof. S. W. Robinson, Sept. 10, p 6
T-Squares, Construction of. E. F. Bengler, July 30, p 6
T-Squares, Improvement in Triangles and. S. N. Rosenbaum, Aug. 6, p 4
*T-Square, New. A. M. P. Maschmeyer, Aug. 27, p 5

V

Vacuum, How to Express Degree of. J. O. Richardson, Nov. 19, p 5
*Valve Motion, May 21, p 6
Valve Stems, Safety. H. Winter, Nov. 12, p 6
Valve, Weighting the Safety, Sept. 10, p 5
Valves, Bevel Seated, Oct. 22, p 6
Valves, Carelessness with Safety. E. D. Towsley, Feb. 19, p 5.
Valves, Efficiency of Balanced, Oct. 22, p 5
*Valves, Give Attention to the Safety, Nov. 12, p 5
Varnish for Patterns, April 30, p 6
Voyages at Sea,—Preparing for, Nov. 12, p 5; Getting Under Way, Dec. 10, p 5

W

Wages of Draughtsmen and Foremen. J. P. Mullin, April 2. p 7
Water Line Connections, Dec. 31, p 5.
Water Powers and Water Privileges, How to Compute Their Power and Efficiency. A. M. Swain, Oct. 22, p 6
Worm Gearing. Robert Briggs, Feb. 19, p 7
*Wrench, Strengthening A. T. R. Almond, April 16, p 6

Z

Zinc, Effect of Using. W. E. Crane, Aug. 27, p 4

☞ Copies of any of the issues of the AMERICAN MACHINIST, during the years 1880 and 1881, may be obtained at six (6) cents each from newsdealers, or from the publishers.

☞ Neatly bound volumes (in cloth) for 1880, containing the fifty-two numbers of Volume III., or for 1881, containing the fifty-three numbers ot Volume IV., will be furnished at *Four Dollars* each at our office. They can be sent by express at small cost to almost any point.

AMERICAN MACHINIST PUBLISHING CO.,
96 Fulton Street, New York.